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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,921	03/11/2004	Yoshihisa Nagasaki	5077-000206	6981
27572	7590	10/26/2006	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			GUHARAY, KARABI	
P.O. BOX 828			ART UNIT	PAPER NUMBER
BLOOMFIELD HILLS, MI 48303			2879	

DATE MAILED: 10/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/798,921	<b>Applicant(s)</b> NAGASAKI ET AL.	
	<b>Examiner</b> Karabi Guharay	<b>Art Unit</b> 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on Amendment, filed on 18 July 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Amendment***

Amendment, filed on 18 July 2006 has been considered and entered.

Amendment of drawing (Fig 17) is approved and overcomes the objection to the drawings.

Claim 9 is canceled.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1& 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Fu et al. (US 6287,993).

Regarding claim 1, Fu et al. disclose a fluorescent device comprising a phosphor (lines 40-45 of column 2) and a phosphor adhesive glass composite (Abstract & lines 4-10 of column 1) dispersed into the phosphor (glass composition is dispersed in the phosphor composition forming phosphorescent glass and glass ceramic) wherein the phosphor adhesive glass composite is expressed by  $x\text{SiO}_2 + y\text{B}_2\text{O}_3 + a\text{ZnO} + b\text{Al}_2\text{O}_3 + c\text{MgO} + m\text{XO}$  where X is at least one element selected from the group consisting of Ca, Sr and Ba,  $5 \leq x \leq 70 \text{ mol\%}$ ;  $0 \leq y \leq 30 \text{ mol\%}$ ,  $x + y \geq 20 \text{ mol\%}$ ,  $5 \leq m \leq 60 \text{ mol\%}$ ,  $a \leq 40 \text{ mol\%}$ ,  $b \leq 10 \text{ mol\%}$ ,  $c \leq 10 \text{ mol\%}$ , and  $a+b+c \geq 10 \text{ mol\%}$  (lines 14-45 of column 2, & lines 23-45 of column 3).

Regarding claim 5, Fu et al. further disclose that the fluorescent device contains  $Tb^{3+}$  and  $1 \leq Tb^{3+} \leq 4$  mol% (activator Tb; Abstract & lines 64 of column 5- line 15 of column 6).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fu et al. (6, 287, 993), and further in view of Mori et al. (US 6459197).

Regarding claims 2 & 4, Fu et al. discloses all the limitations of claims 2-3 except for the phosphor material being europium activated yttrium oxysulfide, instead discloses europium activated yttrium oxide (lines 8-16 & 47-52 of column 7). Fu et al. further teaches for variety of colors different fluorescent materials are added.

However, in the same field of fluorescent device, Mori teaches that yttrium oxide or europium activated yttrium oxysulfide are art recognized equivalent material for red color emission (lines 18-28 of column 6).

Thus it would have been obvious to use yttrium oxysulfide phosphor instead of yttrium oxide since the selection of known equivalents are within the level of ordinary skill in the art.

Regarding claim 3, Fu et al. disclose that the range of "y" value is  $0 \leq y \leq 15$  mol% (line 24 of column 2), while range of "m" value is  $6.5 \leq m \leq 60$  mol% ( line 30-33 of column 3).

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juestel et al. (US 20020027420), and further in view of Fu et al. (6, 287, 993).

Regarding claims 6-7 & 8, Juestel et al. disclose a fluorescent lamp (1 of Fig 1) having a non-linear discharge path (bended tube of Fig 1) and a europium activated yttrium oxysulfide phosphor (paragraph 12) on the wall of the discharge tube.

However, Juestel et al. fails to teach a phosphor adhesive glass composite together with the phosphor material.

However, Fu et al. teach a phosphor adhesive glass composite having claimed composition (see rejection of claim 1) and further disclose that such glass ceramic composite with phosphor material provides a long-lasting phosphorescence and is capable of providing rich variety of colors when irradiated by UV radiation (lines 1-11 of column 1).

Juestel's fluorescent device produces UV radiation from the discharge and irradiates the phosphor on the wall to produce phosphorescence.

Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the glass composite, as disclosed by Fu et al. in the device of Juestel et al. since this will provide a long lasting luminescent colors.

### ***Response to Arguments***

Applicant's arguments filed on 18 July 2006 have been fully considered but they are not persuasive.

(1) Applicant contends that "Fu only discloses a composition of glass and glass-ceramic and not a composite layer adhered to glass" (see Remark page 8).

In response examiner respectfully presents that Fu discloses a phosphorescent glass and glass ceramic.

Examiner agrees Fu does not disclose composite layers.

Applicant's amendment, calls for "a phosphor and a phosphor adhesive glass composite dispersed into the phosphor to adhere".

The claim1 reads on Fu reference, since Fu discloses phosphor composition and adhesive glass composite, which is dispersed in phosphor composition making a long lasting phosphorescence glass and glass ceramic.

(2) Applicant further contends (see Remark, page 9) glass matrix of Fu has no layers that adhere to one another. However, claim language does not call for two separate layers rather claim limitation calls for a phosphor and glass composite dispersed in phosphor to adhere.

Further applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., layers adhere to one another) are not recited in the rejected claim.

### ***Other Prior Art Cited***

The prior art made of record and not relied upon is considered pertinent to

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applicant's disclosure : Yamawaki et al. (JP 08190896A).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is 571-272-2452. The examiner can normally be reached on Monday-Friday 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*K. Guharay*  
Karabi Guharay  
Primary Examiner  
Art Unit 2879

10/25/06